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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO.   |
|--|-------------|----------------------|---------------------|--------------------|
| 10/668,375   | 09/24/2003  | Ralf Ludwig          | 006410.00003        | 4792               |
| 22907  | 7590        | 10/20/2005           | EXAMINER            |                    |
| <b>BANNER &amp; WITCOFF</b><br>1001 G STREET N W<br>SUITE 1100<br>WASHINGTON, DC 20001 |             |                      |                     | CULBERT, ROBERTS P |
| ART UNIT   |             | PAPER NUMBER         |                     |                    |
|  |             | 1763                 |                     |                    |

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

|                 |                  |  |
|-----------------|------------------|--|
| Application No. | 10/668,375       |  |
| Examiner        | LUDWIG ET AL.    |  |
| Roberts Culbert | Art Unit<br>1763 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1) Responsive to communication(s) filed on 16 September 2005.  
2a) This action is FINAL.                    2b) This action is non-final.  
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) 14-17 is/are withdrawn from consideration.  
5) Claim(s) \_\_\_\_\_ is/are allowed.  
6) Claim(s) 1-13 and 18-20 is/are rejected.  
7) Claim(s) \_\_\_\_\_ is/are objected to.  
8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9) The specification is objected to by the Examiner.  
10) The drawing(s) filed on 24 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/25/05.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Election/Restrictions***

Applicant's election without traverse of Group I, (claims 1-13 and 18-20) in the reply filed on 9/16/05 is acknowledged. Claims 14-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### ***Claim Objections***

Applicant is advised that should claim 4 be found allowable, claim 19 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-9, 13 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2002-214760 to Takaoka et al.**

Regarding Claim 1, Takaoka et al. teach substantially a defect repair method for repairing defects occurring on one and the same component, in particular for repairing quartz defects on alternating phase shift masks, comprising: performing defect repair method steps substantially based on mechanical processes; (See Paragraph 10 of translation, and Figures 5 and 6) and performing defect repair method steps substantially based on etching processes. (See Paragraph 9 of translation and Figures 2-4)

Regarding Claim 2, Takaoka et al. teach that the mechanical processes are nanomachining steps since the marginal part is physically shaved by AFM probe.

Regarding Claims 3-5 and 18-20, Takaoka et al. teach using a focused ion beam (a gas injection technique).

Regarding Claim 6, Takaoka et al. teach that the same defect is repaired.

Regarding Claim 7, Takaoka et al. teach quartz bump defects.

Regarding Claim 8, Takaoka et al. teach performing mechanical processing after chemical processing.

Regarding Claim 9, Takaoka et al. teach etching partially repairs the defect at an edge region.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-214760 to Takaoka et al. in view of the conference proceedings as provided in the publication "high precision mask repair using nanomachining", to M. Verbeek and R. White, a lecture at the 18<sup>th</sup> European Mask Conference on Mask Technology Jan 15-16, 2002.**

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Regarding Claims 10-12, Takaoka et al. does not expressly teach that the defect is completely left at an edge region or the amount of the defect that is left at the edge region. However, Verbeek et al. teaches that nanomachining methods may be used to successfully repair a partially repaired or completely left defect that has been left after conventional methods such as laser and focused ion beam. It would have been obvious to one of ordinary skill in the art at the time of invention to use the nanomachining method to repair a defect that has been completely left or at least 50% left in order to successfully repair defects that are left after conventional processing.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (571) 272-1433. The examiner can normally be reached on Monday-Friday (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R. Culbert  
Examiner  
Art Unit 1763



Allan Olsen  
Primary Patent Examiner  
Art Unit 1763

